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What will an extreme rainfall event in West Africa look like by 2100?

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In West Africa, the effects of climate change are already being felt, with increases in the intensity of extreme rainfall observed in rain gauge and satellite datasets over the last few decades. Given the region's high vulnerability, an understanding of how extreme rainfall events may change further in the future climate is vital.

West Africa receives the majority of its rainfall via convection, which is not well-represented in global climate models (GCMs). As an alternative to GCMs, pseudo-global-warming (PGW) experiments add the climate change signal from GCMs to present-day high-quality reanalysis and use this to drive high-resolution model runs of present-day extreme events in an end-of-century climate.

Initial results from PGW case studies performed using the ICOsahedral Nonhydrostatic (ICON) model will be presented. Overall, the most intense rainfall rates show the largest increase under end-of-century conditions and cannot be explained by Clausius-Clapeyron scaling alone.

Primary author: WOODHAMS, Beth (Karslruhe Institute for Technology)

Co-authors: FINK, Andreas; KNIPPERTZ, Peter (Karslruhe Institute for Technology)

Presenter: WOODHAMS, Beth (Karslruhe Institute for Technology)

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